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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,562	10/15/2001	Shigeru Kitsutaka	110712	2254

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Oliff & Berridge  
PO Box 19928  
Alexandria, VA 22320

EXAMINER
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LEIVA, FRANK M

ART UNIT	PAPER NUMBER
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3714

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08/15/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/937,562

Applicant(s)

KITSUTAKA, SHIGERU.

Examiner

Frank M. Leiva

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3714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 17 July 2007 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baldwin (USPN 5,835,096) and further in view of Smith et al. (USPN 6,599,194 B1).**

In regards to:

4. **Regarding claims 1, 12, and 23; Baldwin discloses:**

a. A game system; which executes a computer program to generate an electronic image to provide more realistic view on a display screen, (Abstract).

b. Means which transforms a depth value of each pixel of an original image into a second depth value formed of lower bits I to J which are positioned lower than the most significant bit of the depth value, (Col. 24:37- Col.25:8), transformation of Depth value by shifting bit toward lower significant value by eliminating unused higher significant value bits, and coding the new format.

- c. Means which sets an alpha value of each pixel to a value corresponding to the second depth value, (Col. 24:37- Col.25:8), where a new depth value is created in a different format.
- d. Means which generates the electronic image based on the set alpha value, wherein the bits I to J are an intermediate set of bits below the uppermost bit and above the lowermost bit, (Col. 29:18-43), wherein images are generated using all portions of the alpha channel, and its most significant bit being "m" in the frame buffer.

- 5. **Claim 2, 13, and 24, Baldwin discloses** a system wherein the original image is blended with a defocused image of the original image based on the alpha value set for each pixel. The process of alpha blending distorts the transparency of an original image in order to allow for the two objects to appear blended together (*see col. 53: In 65-col. 54: In 45*).
- 6. **Claim 3, 14, and 25, Baldwin discloses** a process wherein the defocused image of the original image is generated by disbursing the original image into a texture buffer and shifting the texture buffer coordinates of a virtual objects disbursed in a similar and then mapping the two objects together through texel interpolation (*see col. 53: In 1-60, col. 53: In 65-col. 54: In 11*).
- 7. **Claim 4, 15, and 26, Baldwin discloses** a method of alpha blending wherein the second depth value is clamped into a give value depending on a bit value contained in the pixel information in the buffers (*see col. 39: In 64-col. 40: In 67*).
- 8. **Claim 5, 16, and 27, Baldwin discloses** the use of buffers and lookup tables to store the index numbers of depth values which are used for index color texture-mapping and the depth value is retrieved to be transformed into a second depth value by performing index color texture-mapping on a virtual object by using the lookup table (*see col. 51: In 60-col. 52: In 67*).
- 9. **Claim 6, 17, and 28, Baldwin discloses** a system of combining two images to maintain texture and realism uses bit information stored in the buffers to retrieve the depth

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values (i.e.: Z-buffers) that are set in the original image (see *col. 3: ln 23-31, col. 6: ln 65-col. 7: ln 22*). These are then compared and interpolated to create a third and fourth depth value (i.e.: the transformed depth values of the original two images) and used to determine the new second depth value (see *col. 19: ln 1-40, col. 45: ln 1-45, col. 48: ln 29-col. 50: ln 33, col. 51: ln 60-col. 52: ln 40*).

10. In reference to claims 7 and 18, Baldwin discloses an image processing system, which generates an image comprising to be used to provide enhanced graphics capabilities. The processing system has been implemented to allow for animated images, which utilizes concepts such as textural interpolation and alpha blending (see *col. 29: ln 10-24, col. 29: ln 31-43, col. 39: ln 40-60, col. 53: ln 60-col. 54: ln 11*). Alpha blending is a well-known and common implementation in the MMX instruction set under the x86 architecture that utilizes a portion of a pixel's stored data to control transparency. As a result it forms a mask effect where an image may be overlaid upon another so that typical objects may appear to blend into the background of screen giving the appearance that they appear as one image. This is a basic concept that allows for modern day 3-D rendering of images and graphics. The implementation of this method includes using several buffers, commonly known as lookup buffers, that contain the information of the two images containing the index color texture-mapping information so that the two may be observed and compared by the processor in order to properly blend the two images together (see *col. 6: ln 65-col. 7: ln 22, col. 53: ln 30-64*). This is discussed in Baldwin where a means which sets bits in a given image information as an index number in a first lookup table for index color texture-mapping is set up (see *col. 19: ln 1-15, col. 23: ln 40-60*). At this time the first lookup table from a source image or object to transform the image information into a third a destination buffer (i.e.: third image). Additionally the same process is done on the 2<sup>nd</sup> image through a same image that will be overlaid on top of the previous image in a destination buffer (i.e.: fourth image) in order to form a new buffer that contained the third and fourth information to be displayed on the screen (see *col. 29: ln 5-col. 31: ln 5*). This information is transferred in the traditionally in the form of 32-bit words (24 bits for color information (RGB) and another 8 for the alpha level).

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11. In reference to claims 8-11, 19-22, and 30-33, Baldwin discloses the creation of two overlapping images through the use of alpha blending as described above; the ability for a virtual object that is a polygon (essential for 3-D texturization in the computer graphics art) having a size equal to a size of a display screen (see *FIGS. 1-3, col. 7: In 8-22, col. 25: In 50-col. 26: In 5*); and a game system wherein the virtual object is a polygon having a size equal to a size of a block obtained by dividing a display screen into blocks. Display screens are inherently divided into blocks as screens are made up of standard pixels in order to create the object that is to appear on the screen.

12. In regards to claims 1, 7, 12, 18, and 23, Baldwin lacks in disclosing the use of his system with a game system. Although he does implement it on a computer with structural means which are analogous to the game system consoles.

13. In regards to claims 1, 12, and 23, Smith et al. discloses a method of implementing alpha blending using a game system, through the overlaying of a TV signal on a video game image (see *col. 15: In 10-20, col. 16: In 20-34*). It would therefore be obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Baldwin with Smith in order to implement the teachings of Baldwin into a system such as Smith's in order to reduce the amount of data to copy when a window is modified increasing speed.

14. In regards to claims 7 and 18, Smith et al. discloses the use of alpha blending to be implemented on a video game system. Smith teaches the use alpha in order to blend the video game with a picture-in-picture capability so that a TV signal maybe overlaid on the display screen (see *col. 15: In 10-20, col. 16: In 20-34*). One would be motivated to take the teachings of Smith one step farther and implement the additional feature of alpha blending into a video game program in order to create a more realistic animated graphical experience for the user, but the benefits of alpha (transparency) values are well known in the art and necessary not only to create the overlays, but to texturize the 3-D picture in 2-D graphics generation. Therefore it would be obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Baldwin with Smith in order to have a game system that implemented the use of the alpha-blending concept.

### ***Citation of Prior Art***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Parikh et al. (US 2002/0057275 A1), Example pixel engine register format. Lapidous et al. (US 2002/0180731 A1), Multi resolution Depth Buffer. Gibson et al. (US 6,311,258 B1), Lookup tables stored in buffers. Luken et al. (US 6,057,851), Lookup tables. Yip et al. (US 6,289,138 B1), General Image Processor. Bunker et al. (US 4,727,365), Alpha Blending.

### ***Response to Arguments***

16. Applicant's arguments filed 09/02/2005 have been fully considered but they are not persuasive for the following reasons:

17. In regards to the argument directed to the rejections of claims 1, 12, and 23; the argument is moot due to new ground of rejection of claims as amended.

18. In regards to the arguments directed to the rejections of claims 7, 18 & 29; "Office action alleges, "alpha blending is a well known and common implementation", the examiner directs attention to Bunker et al. 1986 disclosure. As for, "The office action alleges to the creation of various non-specific buffers", the examiner stated specifically to "commonly known as lookup buffers, that contain the information of the two images...", and no creation of these buffers, since they are inherent to the implementation of lookup tables, please see Gibson et al.

19. In regards of the previously argued "specific relationship among the various bits", there is relationship specified in the claim language other than the use of relational operators and thus used for example, any other relation suggested by the applicant would not be in the scope of the claims. Examiner finds rejection proper.

20. In regards to the arguments directed to the dependent claims 2-6, 8-11, 13-17, 19-22, 24-28, and 30-33 rejections are not persuasive since the rejections to the independent claims stand.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Leiva whose telephone number is (571) 272-2460. The examiner can normally be reached on M-Th 8:30am - 5:pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert E. Pezzuto can be reached on (571) 272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FML

08/10/2007

  
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